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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/543,115	02/17/2006	Randolf Kraus	304-849	2616
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EXAMINER				
ZHU, JOHN X				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/543,115

**Applicant(s)**

KRAUS, RANDOLF

**Examiner**

JOHN ZHU

**Art Unit**

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**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 December 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/5508)
- Paper No(s)/Mail Date 3/12/08
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Inventor's Patent Application
- 6) ☐ Other: \_\_\_\_\_

**FINAL REJECTION**

1. Response to communications filed on 12/26/07 and IDS filed on 3/12/08.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Calvin (4,345,167).

With respect to claim 1, Calvin discloses all aspects of the claimed invention including...

a capacitive sensor element (element 1), whose capacitance changes as a function of said operating state,

a central capacitor (13),

a first controllable connecting means (9) which, as a function of a triggering signal, supplies a charging voltage to said capacitive sensor element,

a second controllable connecting means (10) which, as a function of said triggering signal, connects said capacitive sensor element to said central capacitor for a transfer of charge from said capacitive sensor element to said central capacitor,

wherein said charging voltage is an AC voltage (11, oscillator) and said AC voltage is supplied to said connecting means as the triggering signal in such a way that,

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in alternating manner, said first connecting means or said second connecting means is conductive (property of common input to nMOS and pMOS).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-4 and 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Calvin as applied to claim 1 above, and further in view of Philipp (US 6,466,036).

Although the system disclosed by Calvin shows substantial features of the claimed invention (discussed in the paragraphs above), it fails to disclose:

where the charging voltage is generated with the aid of a DC voltage source and a square-wave voltage source with a common reference potential, a clamping diode being looped in the conducting direction between a charging voltage node and said DC voltage source and a capacitor and a resistor are looped in series between said charging voltage node and the square-wave voltage source [claim 2];

where the first connecting means is a diode [claim 3];

where an anode of the diode is connected to the charging voltage node and that a cathode of the diode is connected to a filter resistor, which is coupled to the capacitive sensor element [claim 4];

where a switch is connected in parallel to the central capacitor [claim 7];

where the sensor has several capacitive sensor elements, where with each of which is associated a first and a second connecting means, and only has one single central capacitor, which is connected in a conducting direction across in each case one decoupling diode to the particular second connecting means, the anode of the decoupling diode being connected by a selection diode in the conducting direction with a selection signal [claim 8];

where the capacitive sensor element is constructed for application to an underside of a surface or a cover having dielectric characteristics [claim 9];

where the capacitive sensor element has a smooth, planar surface for engagement purposes [claim 10];

where the capacitive sensor element is a voluminous, elastic, elongated body of electrically conductive material [claim 11].

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Calvin, as evidenced by Philipp.

Philipp discloses a charge transfer capacitance measurement circuit having:

where the charging voltage is generated with the aid of a DC voltage source and a square-wave voltage source with a common reference potential, a clamping diode being looped in the conducting direction between a charging voltage node and said DC voltage source and a capacitor and a resistor are looped in series between said charging voltage node and the square-wave voltage source [claim 2] (col. 4, lines 30-46);

where the first connecting means is a diode [claim 3] (37, Fig. 19);

where an anode of the diode is connected to the charging voltage node and that a cathode of the diode is connected to a filter resistor, which is coupled to the capacitive sensor element [claim 4] (col. 12, lines 32-37);

where a switch is connected in parallel to the central capacitor [claim 7] (S3, Cs, Fig. 1);

where the sensor has several capacitive sensor elements, where with each of which is associated a first and a second connecting means, and only has one single central capacitor, which is connected in a conducting direction across in each case one decoupling diode to the particular second connecting means, the anode of the decoupling diode being connected by a selection diode in the conducting direction with a selection signal [claim 8] (Fig. 14; col. 13, lines 41-47);

where the capacitive sensor element is constructed for application to an underside of a surface or a cover having dielectric characteristics [claim 9] (col. 13, lines 56-58);

where the capacitive sensor element has a smooth, planar surface for engagement purposes [claim 10] (col. 13, lines 64-66);

where the capacitive sensor element is a voluminous, elastic, elongated body of electrically conductive material [claim 11] (col. 4, lines 25-29).

Given the teaching of Philipp, a person having ordinary skill in the art at the time of the invention would have readily recognized the desirability and advantages of modifying Calvin by employing the well known or conventional features of proximity

sensing technology, such as disclosed by Philipp in order to provide an enhanced proximity sensing means in the Calvin device.

6. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Calvin as applied to claim 1 above, and further in view of Gremm (6,518,820).

Although the system disclosed by Calvin shows substantial features of the claimed invention (discussed in the paragraphs above), it fails to disclose:

where the second connecting means is a bipolar transistor [claim 5];

where the transistor is connected to the charging voltage node, that an emitter of the transistor is connected to a filter resistor, which is coupled to the capacitive sensor element and that a collector of the transistor is connected to the central capacitor whose other terminal is connected to a reference voltage [claim 6].

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Calvin, as evidenced by Gremm.

Gremm discloses a capacitance measurement circuit for a sensor element of a contact switch having:

where the second connecting means is a bipolar transistor [claim 5] (col. 2, lines 51-54); where the transistor is connected to the charging voltage node, that an emitter of the transistor is connected to a filter resistor, which is coupled to the capacitive sensor element and that a collector of the transistor is connected to the central capacitor whose other terminal is connected to a reference voltage [claim 6] (Fig. 14, col. 13, lines 41-43).

Given the teaching of Gremm, a person having ordinary Skill in the art at the time of the invention would have readily recognized the desirability and advantages of modifying Calvin by employing the well known or conventional features of capacitance sensing technology, such as disclosed by Gremm in order to provide an enhanced capacitance sensing means in the Calvin device to obtain a large signal swing of the circuit.

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

8. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 3/12/08 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any



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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN ZHU whose telephone number is (571)272-5920. The examiner can normally be reached on M-F, 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Diego Gutierrez/  
Supervisory Patent Examiner, Art Unit 2831

John Zhu  
Examiner  
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